

REPORT OF THE  
NATIONAL PETROLEUM COUNCIL'S  
COMMITTEE ON ANALYZATION OF THE REPORT OF SIXTEEN NATIONS

Upon motion the following Resolution was adopted by the  
NATIONAL PETROLEUM COUNCIL - JANUARY 22, 1948

RESOLVED: That the Report of the Committee is hereby accepted and adopted as an Analysis of the Report of the 16 Nations and that such adoption conveys no expression of the Council with respect to the propriety or advisability of the European Recovery Program.

REPORT OF THE  
NATIONAL PETROLEUM COUNCIL'S  
COMMITTEE ON ANALYZATION OF THE REPORT OF SIXTEEN NATIONS

In accordance with action by the National Petroleum Council on October 9, 1947 this Committee has been appointed:

"to analyze the report of the sixteen nations submitted under the so-called Marshall Plan, with respect to petroleum, petroleum products, and petroleum equipment, and to report this analysis." (Agenda Committee Report)

BACKGROUND INFORMATION

On June 5, 1947 Secretary of State Marshall, in a speech delivered at Harvard University, said:

"Before the United States Government can proceed much further in its efforts to alleviate the situation and help start the European world on its way to recovery, there must be some agreement among the countries of Europe as to the requirements of the situation, and the part those countries themselves will take in order to give proper effect to whatever action might be undertaken by this Government. It would be neither fitting nor efficacious for this Government to undertake to draw up unilaterally a program designed to place Europe on its feet economically.... The initiative ....must come from Europe. The role of this country should consist of friendly aid in the drafting of a European program and of later support of such a program so far as it may be practical for us to do so. The program should be a joint one agreed to by a number, if not all European nations."

Shortly after Secretary Marshall's statement, the Foreign Ministers of the United Kingdom and France invited the Foreign Minister of the U.S.S.R. to meet with them to consider if, as a joint

effort by all the European countries, there might be devised a program for the economic recovery of Europe and a determination made of what the requirements of such a program might be. The Foreign Minister of the U.S.S.R. refused to agree to the proposal to work out a cooperative program for European recovery.

Early in July, the United Kingdom and France invited all other European countries (except Spain) to attend a conference to formulate such a program. Fourteen other countries responded favorably and soon thereafter representatives of these sixteen European nations met together in Paris for this purpose. They formed a Committee of European Economic Cooperation (the CEEC) and commenced work. The countries represented on the CEEC are: Austria, Belgium, Denmark, Ireland, France, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey, and the United Kingdom. The needs and potential contributions of western Germany were also taken into account in the work of the CEEC.

#### ANALYSIS OF SIXTEEN NATIONS REPORT

The report prepared at the Paris Conference (sometimes called the "Paris Report") was completed September 22, 1947 and subsequently was transmitted to the United States. It consists of two volumes and is the report which this Committee has been asked to analyze.

The basic data in the CEEC report are shown in the attached report of our Subcommittee. This report also explains how the CEEC figures were prepared, what items were and were not considered and gives a brief explanation of petroleum operations outside the United States in relation to the supply problems of the CEEC countries.

PETROLEUM REQUIREMENTS

The main Committee has analyzed the stated "dollar" oil requirements of the CEEC countries and their dependencies in regard to foreign dollar oil availability, required exports from the United States to meet CEEC requirement figures, the relationship with 1947 actual exports and with the probable 1948 export availability as determined by estimates of the Bureau of Mines. The data on foreign dollar oil availability were obtained from the United States Department of State and represent their summation of individual American company estimates of minimum availability, that is, amounts of foreign "dollar" oil available after covering all other estimated foreign requirements and planned United States imports.

The Committee has been advised that the Department of State has prepared a revision of the CEEC report estimates of requirements for presentation to the Congress. To the extent that those new requirement estimates for "dollar" oil are changed from the original, estimates the needs for exports from the United States & "shortage" of residual shown below would be altered correspondingly.

Requirements have been broken down into four major categories: crude, residual fuel oil, other principal products and specialty products - because of divergent supply and utilization problems involved. The requirement figures include dependencies of CEEC countries and Western Germany.

CRUDE OIL

	(Thousand Barrels Daily)			
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
"Dollar" crude requirements (1)	146	178	193	304
Foreign "Dollar" crude availability*	<u>123</u>	<u>247</u>	<u>219</u>	<u>397</u>
Exports required from U.S. (2)	23	-	-	-
Actual U. S. exports (10 mos.1947) to CEEC countries	13			

(1) Assuming the refining construction program in the CEEC part is carried out.

(2) Even when foreign availability equals or exceeds requirements volumetrically a continuing small specialty crude export may be required from the United States

RESIDUAL FUEL OIL

	(Thousand Barrels Daily)			
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
"Dollar" residual requirements	138	161	171	142
Foreign "Dollar" residual availability*	<u>8</u>	<u>134</u>	<u>110</u>	<u>110</u>
"Shortage (1)	130	27	61	32
Actual U. S. exports (10 mos.1947) to CEEC countries	4			

(1) The U.S. has been, is, and is assumed to continue as a net importer of residual fuel oil. Therefore, no exports are shown from the United State as such exports would presumably be balanced by increased imports and, therefore, no net increase in availability for CEEC countries would be obtained.

OTHER PRINCIPAL PRODUCTS

(Motor Gasoline, Kerosene, Tractor Fuel, Gas Oil and Diesel Oil)

	(Thousand Barrels Daily)			
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
"Dollar" requirements	212	208	208	157
Foreign "dollar" availability*	<u>157</u>	<u>158</u>	<u>167</u>	<u>158</u>
Exports required from U. S.	55	50	41	-
Actual U. S. exports (10 mos.1947) to CEEC countries	110			

SPECIALTY PRODUCTS

(Aviation gasoline & Blending agents, White spirits & naphthas,  
Lubes, Asphalt, Wax and Petroleum Coke)

	(Thousand Barrels Daily)			
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
"Dollar" requirements	34	37	35	31
Foreign "dollar" availability*	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Exports required from U. S.	34	37	35	31
Actual U.S. exports (10 mos.1947) to CEEC countries		32		

SUMMARY OF ESTIMATED U.S. EXPORT REQUIREMENTS

	(Thousand Barrels Daily)			
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Exports required from U.S. (excl. Residual)*	112	87	76	31
Actual U.S. exports (10 mos.1947) to CEEC countries		159		

\* The Committee does not imply that the actual situation will work out as estimated, or suggest allocations of export availability between areas. The analysis given above is merely for illustrative purposes of the probable relative situation based on estimates furnished to the Committee.

ESTIMATED 1948 UNITED STATES IMPORT-EXPORT SITUATION

The latest published Bureau of Mines estimate for 1948 (November 1947) indicates an average export availability of 407,000 B/D - 137,000 B/D crude and 270,000 B/D products. However, if this is brought up to date merely to the extent of correcting for the actual January 1, 1948 stock position and applying the full correction against exports, the revised figures would be 125,000 B/D crude and 240,000 B/D products available for export, after providing for domestic demands, or a total of 365,000 B/D average over the year. The Bureau of Mines estimated imports for the year 1948 are 456,000 B/D. On this basis the imports would exceed exports by 91,000 B/D average.

Exports from Districts II, IV and V, which are not tributary to Europe, were 203,000 B/D during the first 10 months of 1947 96,000 B/D crude, 107,000 B/D products. If it is assumed that these exports will continue at the same rate in 1948, the export availability from District I and III would be 29,000 B/D of crude oil and 133,000 B/D of products, or a total of 162,000 B/D. If it were apportioned on the same percentage basis as the actual exports to various areas during the first 10 months of 1947, the availability for CEEC countries would be 102,000 B/D total which also covers the export requirements to CEEC countries shown above. This assumes there will be no exports of residual fuel oil.

In regard to the assumptions based on Bureau of Mines estimates the Committee wishes to point out the possible deviations in actual requirements from those estimated in advance. For example, in December, 1946 Bureau of Mines estimated the 1947 domestic demand to be 5,106,000 barrels daily; a difference of 332,000 barrels daily or 6.5%. Similar differences between actual and estimated demand occurred with industry estimates, and others, such as that of the Economics Committee of the Interstate Oil Compact Commission.

As regards residual fuel oil the basic data of the CEEC report show that a large proportion of the increasing requirements result from projected coal to oil conversions. These conversion requirements based on the situation as of January 1, 1948, are shown below compared with the residual fuel oil "shortage" figures given above. The data on conversion requirements are not complete, but are adequate for illustrative purposes.

	(Thousand Barrels Daily)			
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Estimated Increased Requirements Attributed to coal to oil con- version projects brought into operation after January 1, 1948	48	103	N.A.	170
Indicated "shortage" of "dollar" residual fuel oil	130	27	61	32

The foreign availability of "dollar" residual for CEEC countries and therefore the "shortage", is based on estimates. The actual availability could vary widely from these estimates depending upon production levels and requirements being either higher or lower than estimated in other areas including the United States.

#### DOLLAR EQUIPMENT REQUIREMENTS

As regards "equipment" requirements, the Subcommittee report gives a breakdown of the requirements for non-American companies broken down into requirements for the CEEC countries and their dependencies and in other over-seas areas. A further breakdown is also given by categories. It will be noted that the so-called equipment requirements include such things as fees, chemicals, autos, etc., which are not directly related to the petroleum industry.

One category in which there is a serious shortage within the industry is No. 2 - Drill Pipe and Casing. The requirements for this category shown for 1948 amount to \$26,254,000 of which \$1,822,000 is within the CEEC countries, \$12,832,000 in Western Germany (see last paragraph of this section) and \$11,600,000 in French and British dependencies and other over-seas areas.

Refinery equipment also is in tight supply. The CEEC report and supplementary information shown in the subcommittee report do not give sufficient breakdown of this or most other types of equipment to allow any specific analysis of use or availability.

The total material requirements for 1948 are shown as 153.8 million dollars. However, if autos, fees and chemicals are eliminated, this would be reduced to 118.2 million dollars. Similar figures for 1948-1951 inclusive are 580.8 million dollars and 473.5 million dollars. Drill pipe and casing requirements are 62.2 million dollars for this period. "Steel" (line pipe) requirements are 97.8 million dollars for the four year period.

It is emphasized by the Committee that these represent dollar material requirements for only non-American companies, with the exception of France and the Bi-zones, and therefore do not, by any means, indicate the total export requirements for the petroleum industry outside the U. S. They do not include, for example, the material requirements of American companies for refinery construction in Europe and other foreign areas or for maintenance and increasing crude oil production and transportation facilities outside the U. S. by American owned companies.

With regard to the availability of American materials for this program, it is tied in, to a large extent, with overall steel availability. The Committee, can, therefore, do no better than quote the Harriman Committee on the subject: "It is probable that the total equipment requirement stated by the CEEC report, plus projected expansion of petroleum capacity by other countries, including the U.S., exceed the world capacity to produce petroleum equipment. Thus, it is extremely unlikely that the U. S. can export as much equipment as is requested. Furthermore, CEEC expectations concerning European equipment as is requested. Furthermore, CEEC expectations concerning European equipment production seem unrealistically high . . . ."

In the light of this statement the Committee feels that most careful screening of material requirements is essential.

SUMMARY

The Committee does not deem it appropriate or within its assignment to comment upon the reasonableness of the estimated requirements or availabilities or upon the broad political and economic problems involved in a European Recovery Program of the nature now being discussed in the Congress and among the public, generally. However, it feels obliged to point out that estimated availabilities are based on three major assumptions made in the CEEC report, viz:

1. The crude oil requirements will be met very largely from Middle East oil.
2. Sufficient transportation will be available.
3. Equipment actually needed for expansion of drilling and refinery capacity will be available.

Drastic curtailment of any of these three items, particularly of the basic oil supply and of equipment, might well cause the program to fail to the extent that the assumptions used prove invalid.

Respectfully submitted

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RESOLUTION OF ADOPTION

RESOLVED: That the Report of the Committee is hereby accepted and adopted as an Analysis of the Report of the 16 Nations and that such adoption conveys no expression of the Council with respect to the propriety or advisability of the European Recovery Program.

REPORT OF SUBCOMMITTEE OF NATIONAL PETROLEUM COUNCIL COMMITTEE  
ON ANALYZATION OF THE REPORT OF THE SIXTEEN NATIONS.

Summary of Petroleum Section of Report of Committee  
of European Economic Cooperation

GENERAL

The sixteen C. E. E. C. countries, their dependent overseas territories and Western Germany report that they will require petroleum items totaling \$2.8 billion (1948-1951), excluding shipping, (\$.6 billion crude, \$1.6 billion products, and \$.6 billion equipment) using July 1, 1947 prices.

The C. E. E. C. countries and Western Germany have twice the population of the United States. Indigenous petroleum supplies in 1947 were 35,000 B/D or 4% of their total requirements. Present production in the United States, by comparison, is 160 times this amount.

This area imports principally finished products which represented 72% of the total 1947 requirements. Development of local refining was progressing before the war, but construction was stopped during the war and considerable capacity was destroyed. Reconstruction of refineries were undertaken immediately following V E day, with results illustrated below:

	<u>M B/D</u>	<u>% of Total Requirements</u>
1938	282	41
1946	163	24
1947 (Partly Estimated)	247	28
1948 (Estimated)	322	30

CHANGES FROM PRE-WAR SITUATION

Since 1939 there have been several changes in the worldwide petroleum situation which affect the C. E. E. C. countries:

1. Roumanian supplies have been cut off.
2. Surplus crude production facilities and refining capacity no longer exist in the world.
3. The discovery of adequate crude reserves in the Middle East.
4. The loss of dollar earning power by C. E. E. C. countries and Western Germany because of partial liquidation of overseas investments, wartime destruction, etc. requiring reductions in dollar expenditures to a minimum by undertaking local manufacturing, such as oil refining, wherever practical.
5. Destruction of steel producing capacity, particularly in Western Germany.
6. Loss of coal production for various reasons.
7. Retarded development of hydro-electric resources.

CRUDE AND PRODUCT REQUIREMENTS AND DESCRIPTION OF PETROLEUM FLOW TO EUROPE:

The petroleum demand data were developed by requesting all oil companies operating in the C. E. E. C. countries to furnish estimates of their requirements. These were screened in some cases to tie in with government programs for gasoline, rationing, coal conversion, etc. There has been no subsequent screening of requirements as it was a basic assumption that all requirements could be delivered as programmed. Furthermore, the detailed data required for adequate screening are not available.

DESCRIPTION OF CRUDE DEMAND AND FLOW TO EUROPE

Europe is the largest petroleum importing area in the world. The C. E. E. C. countries represent approximately 1/3 of the total

demand, ex Russia and the United States. The principal areas which are expected to furnish imports are: The Persian Gulf, Near East, Caribbean and U. S. Gulf. The crude situation in the C. E. E. C. countries is summarized in the table hereunder:

<u>M Barrels Daily</u>	<u>CRUDE OIL</u>					
	<u>1938</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Requirements (Indicated Refy. Runs)	292	252	313	398	508	651
Indigenous Supplies	<u>43</u>	<u>35</u>	<u>49</u>	<u>51</u>	<u>50</u>	<u>50</u>
Crude Oil to Imported	(249)	(217)	(270)	(347)	(458)	(601)

Crude imports during the first eight months of 1947 into the C. E. E. C. countries approximate 200,000 B/D, supplied as follows:

	<u>M B/D</u>	<u>% of Total</u>
United States	12	6
Caribbean	102	51
Near East and Persian Gulf	82	41
Others, principally Mexico and Peru	4	2

The report anticipates that as new European refining capacity is installed crude will be obtained principally from the Middle East and shipments from the U. S. Gulf and Caribbean would decline to a nominal amount. Crude from the Middle East and Caribbean is furnished both by British and American companies (a relatively small amount is obtained from French interests in the Iraq Petroleum Company and moves to French refineries.)

REFINERY OPERATIONS

Operations on imported crude were projected in the report as follows:

	<u>Crude Imports M B/D</u>	<u>% From Dollar Sources</u>	<u>%Over 1938</u>	<u>%Over 1947</u>
1938	249	47	-	-
1946	125	36	(50)	-
1947	217	49	(13)	-
1948	270	54	8	25
1949	347	51	39	60
1950	459	47	84	112
1951	602	55	141	178

Increased refining capacity is projected for several countries but nearly 3/4 of the planned expansion is in France and Great Britain. This is illustrated by the following table:

Indicated Refinery Runs  
(Includes Indigenous Crude and Synthetics)

<u>M B/D</u>	<u>1938</u>	<u>1947</u>	<u>1951</u>
France	146	108	269
Great Britain	58	60	188
Italy	31	36	53
Netherlands	8	16	39
Sweden	2	12	39
Others	<u>47</u>	<u>20</u>	<u>63</u>
Total	292	252	651

Note: These estimates include American owned companies which, except for France and Bi-Zone, are not included in equipment requirement estimates as explained later.

In addition to the refining expansion in the C. E. E. C. countries, a considerable expansion is planned by both American and non-American companies in the Caribbean as well as the Eastern Hemisphere outside of Europe.

No detailed data are available to the Subcommittee concerning the type of refining equipment which will be installed during the period, but the following pattern of product demand, in the C. E. E.C. estimates, shows the yields required if all product demands were to be met by local refining:

	<u>1938</u>	<u>1947</u>	<u>1951</u>
Motor Fuel	47%	31%	27%
Middle Dist.	23%	29%	23%
Fuel Oils	21%	33%	44%
Others	9%	7%	6%

Product Requirements

The following product requirements are estimated in the report for the C. E. E. C. countries, Western Germany and dependent overseas territories:

M B/D	C.E.E.C. and West.Germany	Dependent Overseas Territories	<u>Total</u>	<u>% Increase</u>		
				<u>Over prev- ious Year</u>	<u>Over 1938 and 1946</u>	<u>Over 1947</u>
1938	696	60	756	-	-	-
1946	680	76	756	0(3)	-	-
1947	875	87	962(1)	27	27	-
1948	1,067	129	1,196(2)	24	58	24
1949	1,186	149	1,335	12	77	39
1950	1,295	161	1,456	9	93	51
1951	1,374	162	1,536	6	103	60

Notes: (1) Supplies and available tankers were inadequate to meet requirements, resulting in stock drafts of about 50 M B/D . 1947 requirement estimates were based on three months actual experience. A recent check by C.E.E.C. estimates based on 9 months actual experience indicates that the original figures will be approximately correct.

(2) Includes stock buildup estimated at 40 M/50 M B/D.

(3) Over 1938.

For comparison, 1948 domestic requirements in the United States were estimated by the Bureau of Mines to be 5,697 M B/D, 83% above 1938.

The report anticipates that requirements of the C. E. E. C. countries and Western Germany will be met as follows:

<u>M B/D</u>	<u>1938</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Refined product requirements	696	875	1,067	1,186	1,295	1,374
Output from local refineries	<u>281</u>	<u>244</u>	<u>321</u>	<u>384</u>	<u>484</u>	<u>626</u>
Products to be Imported	(415)	(631)	(745)	(802)	(811)	(748)

Despite the growth expected in refinery capacity it would be necessary to increase product imports each year until 1951. The increased refinery runs in 1948 and 1949 are expected to result from rehabilitation of damaged plants and improvements in existing facilities. By 1950 and 1951, however, the estimates envision the completion of several new refineries principally in the U. K., France, Netherlands and Sweden.

Classification of the above product demand for the C. E. E. C., countries and Western Germany into three major divisions is shown below:

<u>M B/D</u>	<u>Motor Fuels and Naphthas</u>	<u>Middle (1) Distillates</u>	<u>Residual Fuel Oil</u>	<u>Total, Incl. Other Products</u>
1938	328	158	147	696
1946	234	205	189	680
1947	273	250	293	875
1948	320	261	420	1,067 (2)
1949	329	287	495	1,186
1950	348	309	558	1,295
1951	368	317	606	1,374

% Increase

1947 Vs. 1938	- 17	/ 58	/ 100	- 2
1948 Vs. 1947	/ 17	/ 4	/ 43	/ 22(2)
1951 Vs. 1947	/ 35	/ 27	/ 107	/ 57

(1) Kerosene, Gas and Diesel Oils

(2) Includes stock build up of approximately 50M B/D or 6% of 1947 requirements.

Gasoline requirements show only a nominal increase over pre-war. They were based on a continuation of the gasoline rationing programs instituted in 1947 before the "austerity" programs of the U. K. and France, and it was assumed that motor vehicle registration would increase about 2.2% per year. The 1951 automotive gasoline requirements are estimated to exceed 1938 by only 5%.

The marked upward trend in middle distillate demand, since 1938, reflects increased use of tractors and diesel burning equipment. The greatest of the C. E. E. C. requirement increases, however, is in residual fuel oil. Although ship's bunkers show a fairly rapid rise as would be expected from the preponderance of oil burning

vessels built during the war, it is in the inland trade where the really phenomenal increases take place. This reflects plans in most of the C. E. E. C. countries for conversion from coal to oil (because of the coal shortages). Some of the outstanding changes occur in the U. K., where almost 75 million barrels (205M B/D) of residual requirements in 1951 are envisioned in the C. E. E. C. report compared with approximately 10 million barrels (27M B/D) in 1938. France, consuming about 10 million barrels of residual per year in 1938, is expected to require over 52 million barrels in 1951. The other C. E. E. C. countries expect to double or treble residual fuel use versus the pre-war period. Austria is exceptional, and anticipates a sharp decline in residual requirements in 1948 and thereafter due to expected increases in hydro-electric power. In spite of increases in all other products total petroleum requirements in this country will decline each year.

The French requirement figures indicate a demand in 1951 close to that anticipated in the Monnet Plan for 1955.

Products imported into C.E.E.C. countries come principally from refineries in the Persian Gulf, Mediterranean, Caribbean and U. S. Gulf.

The U. S. export quota established by the Office of International Trade on November 11, 1947 for the fourth quarter of this year for C. E. E. C. countries (excluding Western Germany) was 70,000 B/D of major products. If this rate were continued through 1948, less than 10% of the major product imports would come from the U. S. and less than 21% of the "dollar" imports of such products would originate in the U. S. Such U. S. exports represent about

1.2% of present United States Production. The total product exports from the United States to these countries during the first 8 months of this year were about 151,000 B/D or 3% of the total United States production during that period.

The future flow of products depends upon the amount and type of refining capacity installed abroad. The contemplated new construction would be sufficient to supply the increasing requirements for motor gasoline, kerosene and distillate, and also to largely eliminate dependence on the United States Gulf for these products. When, and if, the contemplated refining facilities are in operation the need for exports from the United States Gulf to C. E. E. C. countries would probably be limited to specialty products in relatively small volume, such as aviation gasoline, lubricating oils, waxes, etc.

Exports of residual fuel to Europe from the United States have always been small and are negligible at present. The reason is that the U. S. has been a net importer of residual for many years.

Coal imports to C.E.E.C. countries from the United States are given in the report on the assumption that residual fuel oil will be available as required for coal to oil conversion programs:

	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Million Metric Tons of Coal from U. S. A.	36(Est.)	41	25	14	6
Residual fuel equivalent of decrease in coal imports from U.S.A. after 1948 @ 4.25 B/Ton - M B/D			185	313	406

The decline in coal imports from the United States after 1948 is appreciably greater, in terms of energy equivalents, than the increase in residual requirements. Continuation of high coal imports

by C. E. E. C. countries, therefore, represents an alternative method of supply of the energy requirements of the program. The report states, however, that the supply of energy in increasing amounts by conversion from coal to residual was used as a basis because it represented a lower expenditure in dollars for the same result:

"Under prevailing conditions it is less costly to import fuel oil from whatever source than to bring in the equivalent quantity of American coal when account is taken of the greater calorific value of fuel oil."

#### DEFINITION OF "DOLLAR OIL"

"Dollar Oil" is defined as oil purchased from American companies regardless of the origin of the oil. As shown previously, only a small proportion of both crude oil and products originate in the United States. The largest proportion of "dollar oil" is supplied by American owned companies operating in the Caribbean and Middle East. Products from dollar sources were estimated at 50% of the total requirements this year decreasing to 43% next year and 33% in 1951.

The calculations of "dollar oil" requirements in the C.E.E.C. report were based on the assumption that the present percentage of sales in the C.E.E.C. countries made by American owned companies would continue, that supplies for these market outlets would be obtained, for dollars, from American owned companies and that non-American companies would be able to obtain their supplies from British and French companies for Sterling or Francs. This method of estimation may understate the needs for dollars to some extent. For 1948, C. E. E. C. estimators indicate that non-American suppliers would be short about 15 million barrels of meeting non-American outlets in C. E. E. C. countries (based on their present percentage of the

estimated total demand and while still retaining their normal outlets in other world areas - some of which represent dollar sales.)

The actual proportion of "dollar oil" requirements will depend on the total new facilities installed and the proportion of such facilities which are installed by American owned companies. The basis used for the "dollar oil" calculation assumes that the new facilities will be installed by American and non-American companies in proportion to their present market outlets.

The number of dollars required to meet a given objective in petroleum supply must, of necessity, be based on so many assumptions (price, completion date of new facilities, yields obtained from refineries, as well as total requirement estimates, etc.) that the result of such calculations must be taken as a very general indication rather than an exact amount for appropriation purposes. This is particularly true of estimates for periods beyond 1948.

British companies operate in most of the world markets. In many cases, particularly in the Western Hemisphere, they sell large amounts of crude and products for dollars. These dollar receipts, in the C. E. E. C. calculation, were not subtracted from the dollar requirements. They were, however, taken into account in the "balance of payment" calculations. No data is available as to the amount involved, but as the British oil companies are generally considered to be the largest dollar earners in the British Empire, it may be assumed that the amount is substantial.

#### PETROLEUM EQUIPMENT

A basic assumption of the C. E. E. C. report was "it has been considered reasonable to assume that the oil program will be met." Such an assumption requires major investments in producing,

refining, pipeline and other equipment. A major effort has been and will be made to develop the production of oil equipment by the participating countries. The total cost of the equipment program (1948-1951) has been set at \$1.84 billion. Of this, it was estimated that the equipment industry of the participating countries would provide \$1.26 billion or 68%. The balance of \$581 million will be purchases in the U. S. Capital project requirements represent about 40% of the total.

The estimates of petroleum equipment and supplies in the C. E. E. C. report were prepared on the following bases and assumptions:

1. The figures include requirements of non-American oil companies (of C.E.E.C. countries) for both equipment and supplies (i.e. chemicals, etc.) divided into three areas.
  - (a) Sixteen countries and Western Germany
  - (b) Dependent overseas territories (i.e. British and French Colonies, etc.)
  - (c) Other overseas areas (i.e. Venezuela, Iran, Indonesia, etc.)

A table of dollar requirements showing this breakdown and also classes of equipment is appended.

2. The requirements are for production, refining and distribution but not for retail marketing.
3. With the exception of France and Bi-Zone, the requirements of American owned companies are not included in either the tabulation of locally available equipment or dollar equipment. Mr. J. A. Beckett, C.E.E.C. petroleum representative, stated that material requirements of American owned companies in the C.E.E.C. countries were

omitted, except for France and Bi-Zone, because of lack of information. There was, he stated no intention to imply that such companies would not have equitable access to local materials or to equitable treatment regarding conversion of local currency to dollars for the purchase of American equipment.

The amount of equipment and materials required from dollar sources (with the exception of France and Bi-Zone) is, therefore, understated by the total amount of materials, both from local and dollar sources, which will be required by American owned companies in the C. E. E. C. countries and dependent overseas territories. These material requirements are not known but will probably exceed one-half of the requirements listed for non-American companies in the same areas. Requirements of American owned companies for equipment in foreign areas other than the above would not have been included in the report in any case. Therefore, the figures, even if corrected for American owned companies in C. E. E. C. countries, would not give a statement of total material export requirements from the U. S. A. for the petroleum industry.

4. The figures given in the appendix represent official revisions of original C. E. E. C. report estimates. The alterations were: inclusion of British, French, Dutch company requirements of dollar steel for Middle East pipelines (1950 and 1951), revision of Bi-Zone

requirements (1948), reduction of refining requirements for France and addition of new French refining project in Lebanon.

5. The equipment requirements include projects of non-American companies to be started prior to 1952, but which will not be in operation in the 1948-1951 period. Present plans, including American companies, contemplate starting construction on 590,000 B/D new capacity within the 16 nations and Bi-Zone involving the extension or erection of about 20 plants (some very small). The operating capacity estimate for 1951 is 399,000 B/D above 1947. The capacity of non-American Plants not completed by 1952 is unknown.

6. The estimates show that 50% of the total material requirements are in overseas areas and most of these are in countries other than colonies and dependencies. These figures include the material requirements to maintain the existing operations of non-American companies in countries such as Venezuela, Colombia, Ecuador, Netherlands West Indies, Iran, Iraq, Palestine, etc., as well as materials for expansion of operations in most areas. No split is available between the materials and equipment requirement for maintenance of present producing and refining rates and those required for expansion of output.

The present operations of non-American companies, of the 16 nations, in areas other than the 16 nations themselves, their dependencies and colonies, exceed 1 million barrels daily of crude production and approach 1 million barrels daily of refinery throughput.

### TANKER SITUATION

The dollar requirements for oil and equipment do not include tanker hire or construction and purchases, which were shown separately.

The tanker tonnage requirements, based on the petroleum requirements for the C. E. E. C. countries and Western Germany, were given as follows:

	<u>Total Requirements Millions of Deadweight Tons</u>	<u>Available From C.E.E.C. Fleets Ex- isting and Planned</u>	<u>Balance Required (Additional con- struction, purchase or hire for dollars)</u>
1947 (1)	13.6	9.0	4.6
1948	15.1	10.7	4.4
1949	16.7	11.4	5.3
1950	18.4	12.4	6.0
1951	19.7	13.0	6.7

NOTE: 1 million deadweight tons is equivalent to about 60 T 2 tankers.

(1) Requirements in 1947 were not met due to overall shortage of tankers in service

This table indicates that the plans for construction of new tankers in C. E. E. C. countries plus purchase from the U. S. Government were inadequate to meet projected increases in require-

ments, thereby indicating an increasing dollar requirement for transportation hire unless more tankers than were planned become available to C. E. E. C. countries,

#### GENERAL SUMMARY OF BASIC FACTORS

Petroleum is in a somewhat unique category because of a combination of factors:

1. It is in short supply in the United States as well as worldwide.
2. Europe is, at present, largely dependent for petroleum upon Western Hemisphere supply sources, including the United States to some extent.
3. Added petroleum production can be made available in the Eastern Hemisphere with less expenditure of materials, manpower, and money than an equivalent amount of added production in the United States, or elsewhere in the Western Hemisphere.
4. During the period 1948-1951 and probably for some years thereafter, any increase in Eastern Hemisphere petroleum facilities for the production, transportation and refining of Eastern Hemisphere crude will result in an equivalent increase in availability of Western Hemisphere petroleum supplies for Western Hemisphere use.
5. No matter what definition of essentiality is used, Europe will be dependent, to a large extent, for minimum essential requirements upon "dollar oil". Any project which would reduce transportation requirements and increase the ratio of crude oil imports to product imports in C. E. E. C. countries will have a direct effect on the dollars required by the participating countries to balance international payments.

PUBLICLY ANNOUNCED PLANNED REFINERY CONSTRUCTION

Barrels 42's daily

<u>Country</u>	<u>Number of Plants</u>	<u>Capacity</u>	<u>Remarks</u>
<u>Western Hemisphere</u>			
Argentina	2	45,000	
Bolivia	2	5,000	
Brazil	2	12,500	
"	1	1,500	Extension
Canada	2	12,700	
"	1	15,000	Extension
Chile	1	10,000	
Colombia	1	5,000	Extension
Ecuador	1	1,200	Extension
Mexico	1	30,000	
Uruguay	1	6,300	Extension
Venezuela	5	180,000	
Total Western Hemisphere		324,200	
<u>Marshall Countries</u>			
Belgium	1	3,000	
France	?	130,000	Rehabilitation & Modernization
Germany	?	35,000	Rehabilitation
Great Britain	7	340,000	
Italy	1	4,200	
"	3	39,000	Extension & Rehabilitation
Netherlands	1	20,000	
"	1	45,000	Extension
Portugal	1	5,000	Extension
Sweden	3	29,000	
"	1	1,000	Extension
Total Marshall Countries		651,200	
<u>E. Hemisphere Excl. Marshall Countries</u>			
Australia	2	4,000	
Br. Borneo	1	20,000	Rehabilitation
Burma	1	15,000	
Canary Is.	1	2,500	Extension
Egypt	1	10,000	Extension
Formosa	1	11,000	Extension
Java-Sumatra-Dutch Borneo	?	100,000	Rehabilitation & Extension
Morocco		20,000	
Iraq	1	12,000	
Palestine	1	60,000	Extension
Spain	1	10,000	
Syria	1	20,000	
Trieste	1	4,000	Rehabilitation
Total E. Hemisphere Ex. Marshall Countries		288,500	
Total E. Hemisphere		939,700	
Total World Excl. U. S.		1,263,900	

RP

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BRITISH OVERSEAS TERRITORIES

Eastern Hemisphere:

Gibraltar, Malta

Bahrein, Bhutan, Oman

Aden, Perim, Sokotra, Kuria & Muria Islands

Cyprus

Malaya & Straits Settlements: Straits Settlement, The Federated Malay States,  
The Unfederated Malay States.

British Borneo: North Borneo, Brunei, Sarawak

Hong Kong

Br. West Africa: Nigeria, Gold Coast, Sierra Leone, Gambia, St. Helena Isl.,  
Ascension Isl.

Br. South Africa: Basutoland, Bechuana, Swaziland, North Rhodesia

Br. East Africa: Kenya, Uganda, Nyasaland, Mauritius Isl., Zanzibar and  
Pemba, Seychelles Isl.

Br. Somaliland

Anglo-Egyptian Sudan

Mandates: Tanganyika, Cameroons, Togo

Fiji Isls.

South Sea Isls.: Tonga, Gilbert and Ellice Isls., Br. Solomon Isls.,  
Phoenix Isls., New Hebrides Isl., Pitcairn Isl.

Br. Antarctic Possessions

Former Italian Col.: Libya, Eritrea, Italian Somaliland

Western Hemisphere:

Newfoundland and Labrador

Bermudas

Br. Honduras

Br. W. Indies: Bahama Isl., Barbados, Jamaica, Trinidad and Tobago Isl.,  
Leeward Isl., Windward Isl.

Br. Guiana

Falkland Isls.

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FRENCH OVERSEAS TERRITORIES

Eastern Hemisphere:

Algeria

Tunisia

Fr. Morocco

French West Africa: Senegal, Mauritania, French Sudan, French Guinea, Ivory Coast, Dahomey, Niger, Dakar & Dependencies, Togo (Mandated Territory)

French Equatorial Africa: Gabun, Middle Congo, Ubangi-Shari, Chad, Cameroons (Mandated Territory)

Madagascar and Dependencies

Somali Coast

Reunion

Indo-China: Cochin-China, Cambodia, Annam, Laos, Tonking, Kwang-Chau-Wan (Leased Territory)

French India

New Caledonia & Dependencies

New Hebrides

French Oceania (numerous small island groups)

Western Hemisphere:

St. Pierre & Miquelon

Martinique

Guadeloupe

French Guiana & Islands

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OVERSEAS TERRITORIES OF OTHER C.E.E.C. COUNTRIES

Portugal

Angola (Port. W. Africa)  
Cape Verde Isls.  
Madeira Isl.  
Mozambique (Port. E. Afr.)  
Port. Guinea  
Port. Timor  
Azores  
Port. India

Belgium

Belgian Congo

Netherlands

Surinam  
Colony of Curacao: Aruba, Curacao, Bonaire  
Netherlands West Indies

Denmark

Greenland  
Faroe Isls.

Greece

Dodecanese Isl.

Norway

Spitsbergen  
Bear Isls.  
Jan Mayen Isl.

NOTES ON MATERIAL AND EQUIPMENT REQUIREMENT ESTIMATES

1) The British figures include the exploration, production, refining and overland transportation requirements of both British and Netherlands owned companies. Netherlands figure includes only distribution requirements.

2) In preparing the attached tables it was necessary to make arbitrary distributions of the total estimates between categories in a few cases:

(a) France and French Overseas - Categories 1 and 2 were given combined and were split about equally, arbitrarily.

(b) Bi-Zone - A split was given for 1948 only. Even this estimate was not given in the same category designations as in other countries and with added information could be split further. The 1949-1951 requirements were all included in category 10 (unclassified) in the 1948-1951 statement.

(c) British Overseas - The 1950 and 1951 revisions were all included under category 8 (steel) as it was understood that the revisions represented the addition of British, Dutch and French company requirements of dollar steel for Near and Middle East pipelines. There were no revisions given of the 1948 and 1949 original estimates for which a detailed split by categories was available.

3) See Schedule of Materials and Equipment, attached, for definitions of categories.

HWP:ADC  
12/16/47

PETROLEUM MATERIALS AND EQUIPMENT REQUIREMENTS EX. U.S.A.

TOTAL 1948 - 1951

(Excludes Total Requirements of American Owned Companies in the 16 Nations, except for France and Bi-Zone. 6 Countries not shown have indicated no needs for American Materials and Equipment)

(Thousand Dollars)	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	<u>Drilling</u>	<u>Casing</u>	<u>Engines</u>	<u>Plant</u>	<u>Auto</u>	<u>Electric</u>	<u>Highly Mfg.</u>	<u>Steel</u>	<u>Chemical</u>	<u>Unclassified</u>	<u>Fees</u>	<u>Total</u>
Austria	-	-	-	-	-	-	-	-	-	2,400	-	2,400
Belgium	-	-	-	640	2,400	-	224	-	278	-	-	3,542
Denmark	-	-	-	-	-	-	-	-	-	8,000	-	8,000
France	3,300	3,400	4,900	5,200	-	-	4,900	-	1,300	-	20,400	43,400
Italy	-	-	-	4,350	-	-	-	-	-	1,415	-	5,765
Netherlands	-	-	-	-	942	-	1,017	302	-	-	-	2,261
Norway	-	-	-	-	650	-	420	-	-	2,830	-	3,900
Portugal	-	-	-	-	-	-	-	-	-	4,800	-	4,800
Turkey	1,719	597	13	502	25	-	-	568	-	98	-	3,522
United Kingdom	600	1,200	2,100	24,900	-	1,000	3,900	400	4,700	-	7,500	46,300
Sub-Total	5,619	5,197	7,013	35,592	4,017	1,000	10,461	1,270	6,278	19,543	27,900	123,890
Bi-Zone	662	12,832	-	1,000	-	6,702	-	-	-	48,904	-	70,100
Total	6,281	18,029	7,013	36,592	4,017	7,702	10,461	1,270	6,278	68,447	27,900	193,990
French Dependencies & Overseas	1,600	1,700	3,400	10,000	700	700	3,500	13,000	1,700	-	10,700	47,000
British Colonies	16,600	8,100	400	1,800	2,100	400	500	1,000	1,900	-	500	33,300
British Other Overseas	85,200	36,400	11,000	29,000	26,100	2,100	8,800	82,500	16,700	-	8,700	306,500
Total	103,400	46,200	14,800	40,300	28,900	3,200	12,800	96,500	20,300	-	19,900	386,800
Total (Ex Pi-Zone)	109,019	51,397	21,813	76,392	32,917	4,200	23,261	97,770	26,578	19,543	47,800	510,690
GRAND TOTAL	109,681	64,229	21,813	77,392	32,917	10,902	23,261	97,770	26,578	68,447	47,800	580,790

IMPORTANT: See attached notes

PETROLEUM MATERIALS AND EQUIPMENT REQUIREMENTS, EX. U.S.A.

1948

(Excludes Total Requirements of American Owned Companies in the 16 Nations, except for France and Bi-Zone. 6 Countries not shown have indicated no needs for American Materials and Equipment)

(Thousand Dollars)	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	<u>Drilling</u>	<u>Casing</u>	<u>Engines</u>	<u>Plant</u>	<u>Auto</u>	<u>Electric</u>	<u>Highly Mfg.</u>	<u>Steel</u>	<u>Chemical</u>	<u>Unclass- ified</u>	<u>Fees</u>	<u>Total</u>
Austria	-	-	-	-	-	-	-	-	-	600	-	600
Belgium	-	-	-	200	750	-	70	-	87	-	-	1,107
Denmark	-	-	-	-	-	-	-	-	-	2,000	-	2,000
France	1,200	1,300	2,800	2,900	-	-	2,800	-	700	-	11,200	22,900
Italy	-	-	-	2,175	-	-	-	-	-	708	-	2,883
Netherlands	-	-	-	-	377	-	301	151	-	-	-	829
Norway	-	-	-	-	175	-	110	-	-	715	-	1,000
Portugal	-	-	-	-	-	-	-	-	-	2,400	-	2,400
Turkey	214	222	13	2	25	-	-	18	-	48	-	542
United Kingdom	<u>200</u>	<u>300</u>	<u>-</u>	<u>3,600</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>100</u>	<u>-</u>	<u>2,500</u>	<u>6,700</u>
Sub-Total	1,614	1,822	2,813	8,877	1,327	-	3,281	169	887	6,471	13,700	40,961
Bi-Zone	<u>662</u>	<u>12,832</u>	<u>-</u>	<u>1,000</u>	<u>-</u>	<u>6,702</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>10,340</u>	<u>-</u>	<u>31,536</u>
TOTAL	2,276	14,654	2,813	9,877	1,327	6,702	3,281	169	887	16,811	13,700	72,497
French Dependencies & Overseas	600	600	-	-	-	-	-	-	-	-	-	1,200
British Colonies	3,800	1,600	100	200	500	100	100	200	400	-	500	7,500
British Other Overseas	<u>22,300</u>	<u>9,400</u>	<u>2,700</u>	<u>8,300</u>	<u>8,500</u>	<u>600</u>	<u>2,400</u>	<u>8,600</u>	<u>5,100</u>	<u>-</u>	<u>4,700</u>	<u>72,600</u>
TOTAL	26,700	11,600	2,800	8,500	9,000	700	2,500	8,800	5,500	-	5,200	81,300
Total (Excl. Bi-Zone)	28,314	13,422	5,613	17,377	10,327	700	5,781	8,969	6,387	6,471	18,900	122,261
GRAND TOTAL	28,976	26,254	5,613	18,377	10,327	7,402	5,781	8,969	6,387	16,811	18,900	153,727

IMPORTANT: See attached notes.

SCHEDULE OF MATERIALS AND EQUIPMENT

CATEGORY

I      DRILLING

Cable Tool Drilling, Tools and Equipment  
Bits and reamers  
Drill Collars, Stem, Substitutes and Couplings  
Chain Transmission Equipment  
Tool Joists  
Surface Rotary Machinery and Equipment except Pumps  
Slush Pumps and Spares  
Sub-surface Rotary Machinery and Equipment  
Geophysical and exploration Equipment  
Winches, Hoists and Well Maintenance Equipment  
Sucker Rods  
Well Head and Flowing Well Equipment  
Rodless Lifting Equipment  
Surface Rod Lifting Equipment  
Subsurface Rod Lifting Equipment  
Unclassified

II     CASING

Drill Pipe  
Well Casing

III    ENGINES

I. C. Engines and Spares  
Pumps and Spares (excl. slush pumps and petroleum dispensing pumps)  
Compressors and Spares  
Steam Engines and Spares  
Turbines and Spares  
Material Handling Equipment  
Power Transmission Equipment  
Machine Tools  
Unclassified

IV     PLANT

Pressure Tanks and Vessels  
Traps and Separators  
Heat Exchangers, Reboilers, Condensers and Coolers  
Boilers and Accessories  
Refinery and Absorption Plant and Equipment not elsewhere specified  
Unclassified

V      AUTOMOTIVE

Trucks - Light, Medium, Heavy  
Road and Rail Tank Vehicles  
Tractors  
Trailers  
Passenger Cars

(Cont'd next page)

CATEGORY

V AUTOMOTIVE (Cont'd)

Construction Plant and Equipment  
Pipeline Equipment  
Marine Equipment and Supplies  
Aviation Equipment Supplies  
Unclassified

VI ELECTRICAL

Electric Motors and Spares  
Generators and Spares  
Circuit Breakers and Switchboards  
Lamps - flashlight, Batteries  
Radio and other Communication Equipment  
Unclassified

VII HIGHLY MANUFACTURED

Valves  
Instruments and Controls  
Petroleum Dispensing Equipment  
Laboratory Equipment  
Unclassified

VIII STEEL

Plates  
Structural  
Tubes and Fittings (other than well casing)  
Drumsheets  
Tinsplate  
Other  
Tankage  
Containers  
Unclassified

IX CHEMICALS

Paints and Coatings  
Metallic and other Catalysts  
Acids  
Caustics  
Salts  
Elements  
Other Compounds  
Unclassified  
Copper and Copper Alloys  
Tin  
Lead and lead products (including Solder and Babbitts)  
Unclassified  
Cement (Oilwell and Building)  
Firebricks and Refractories  
Building Material  
Barytes and Bentohites  
Filter Clay  
Unclassified

ESTIMATED TOTAL REQUIREMENTS FOR PETROLEUM PRODUCTS (a)

(Participating Countries, Western Germany and Dependent Oversea Territories)

(Thousands of Barrels)

<u>Product</u>	<u>1938</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Aviation Gasoline	2,640	6,530	8,781	10,322	11,784	13,281	15,213
Motor Gasoline	124,077	84,778	97,721	118,085	121,518	128,880	135,154
White Spirit	1,498	1,969	2,088	2,263	2,376	2,447	2,495
Kerosines	19,079	22,803	27,300	27,462	29,022	30,051	31,640
Gas/Diesel Oils (b)	45,152	60,060	71,733	77,997	87,075	95,278	97,251
Fuel Oils (b)	60,456	79,154	120,659	176,416	207,028	231,094	247,007
Lubricants	11,603	12,292	11,685	12,106	13,070	14,042	14,634
Bitumen	10,345	7,155	9,102	10,638	12,792	13,798	14,500
Paraffin Wax	1,212	795	992	1,401	1,543	1,582	1,590
Petroleum Coke	755	209	992	1,141	1,174	1,086	1,157
Total	<u>275,817</u>	<u>275,745</u>	<u>351,053</u>	<u>437,331</u>	<u>487,382</u>	<u>531,539</u>	<u>560,641</u>
M B/D	756	755	962	1,196	1,335	1,456	1,536

(a) Requirements represent consumption plus/minus any stock changes. Indigenous supplies and products from imported crude oil are included.

(b) Gas/Diesel Oils and Fuel Oils include bunkers at ports in the participating countries and Western Germany and the dependent oversea territories to vessels of all nationalities. Bunkers at all other ports - even for European flag vessels - have been entirely excluded.

ESTIMATED TOTAL REQUIREMENTS FOR PETROLEUM PRODUCTS (a)  
(Participating Countries and Western Germany)

(Thousands of Barrels)

<u>Product</u>	<u>1938</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Aviation Gasoline	2,569	4,723	6,389	7,655	8,435	9,294	10,544
Motor Gasoline	115,585	78,598	91,275	107,051	109,149	115,321	121,116
White Spirit	1,498	1,969	2,080	2,255	2,360	2,431	2,479
Kerosines	16,780	20,774	24,863	24,860	26,255	27,016	28,448
Gas/Diesel Oils (b)	40,734	53,912	66,385	70,696	78,550	85,700	87,321
Fuel Oils (b)	53,531	63,978	106,980	153,708	180,759	203,493	221,069
Lubricants	11,155	11,651	11,024	11,617	12,519	13,470	14,007
Bitumen	10,345	6,545	8,443	10,065	12,145	13,225	13,853
Paraffin Wax	1,165	740	937	1,346	1,473	1,511	1,519
Petroleum Coke	<u>755</u>	<u>209</u>	<u>992</u>	<u>1,141</u>	<u>1,174</u>	<u>1,086</u>	<u>1,157</u>
Total	254,117	248,099	319,368	390,394	432,819	472,547	501,513
M B/D	696	680	875	1,067	1,186	1,295	1,374

(a) Requirements represent consumption plus/minus any stock changes. Indigenous supplies and products from imported crude oil are included.

(b) Gas/Diesel Oils and Fuel Oils include bunkers at ports in the participating countries and Western Germany to vessels of all nationalities. Bunkers at non-European ports - even for European flag vessels - have been entirely excluded.

ESTIMATED TOTAL REQUIREMENTS FOR PETROLEUM PRODUCTS (a)  
(Dependent Oversea Territories Only)

(Thousands of Barrels)

<u>Product</u>	<u>1938</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
Aviation Gasoline	71	1,807	2,392	2,667	3,349	3,937	4,669
Motor Gasoline	8,492	6,181	6,446	11,034	12,369	13,559	14,038
White Spirit	-	-	8	8	16	16	16
Kerosines	1,299	2,029	2,437	2,602	2,766	3,035	3,192
Gas/Diesel Oils (b)	4,418	6,148	5,342	7,301	8,525	9,578	9,931
Fuel Oils (b)	6,925	10,175	13,684	22,707	26,270	27,601	25,937
Lubricants	448	641	662	489	551	572	627
Bitumen	-	610	659	574	646	573	647
Paraffin Wax	47	55	55	55	71	71	71
Total	<u>21,700</u>	<u>27,646</u>	<u>31,685</u>	<u>47,437</u>	<u>54,563</u>	<u>58,992</u>	<u>59,128</u>
M B/D	60	75	87	129	149	161	162

(a) Requirements represent consumption plus/minus any stock changes. Indigenous supplies are included.

(b) Gas/Diesel Oils and Fuel Oils include bunkers at ports within the dependent oversea territories.

ESTIMATED TOTAL REQUIREMENTS FOR PETROLEUM PRODUCTS (BY COUNTRIES)

(Participating Countries, Western Germany and Dependent Oversea Territories)

(Thousands of Barrels)

	<u>1938</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
<b>1. Participating Countries</b>							
Austria	2,638	6,932	7,339	7,071	7,000	6,456	6,053
Belgium	6,229	6,379	12,273	13,420	13,868	14,261	14,456
Denmark	6,900	5,556	10,725	14,216	15,736	17,438	17,425
France	58,194	31,699	45,147	62,893	75,794	87,176	101,032
Greece	2,935	3,029	5,083	6,164	6,552	7,035	7,634
Iceland	153	464	781	1,091	1,037	1,085	1,083
Ireland	2,432	1,914	4,280	6,203	6,986	7,937	8,807
Italy	21,180	15,188	29,243	33,845	36,704	39,734	43,404
Luxembourg	244	224	320	457	477	491	512
Netherlands	12,275	13,229	19,768	21,435	23,057	24,579	24,820
Norway	4,536	4,218	7,666	8,789	9,725	10,545	11,433
Portugal	4,620	4,285	5,016	6,518	7,022	7,526	7,707
Sweden	10,224	13,498	22,090	22,792	24,070	25,818	27,425
Switzerland	3,667	4,464	7,763	7,691	9,600	9,578	9,566
Turkey	1,540	1,795	2,106	3,075	4,481	5,694	6,880
United Kingdom	83,445	115,932	127,525	159,183	171,467	187,787	193,688
Sub-Total	<u>221,212</u>	<u>228,306</u>	<u>307,125</u>	<u>374,843</u>	<u>413,626</u>	<u>453,090</u>	<u>481,925</u>
<b>2. Western Germany</b>							
Bi-zone	29,970	17,917	10,472	13,590	16,424	16,621	16,755
French zone	2,935	1,376	1,771	1,961	2,769	2,836	2,833
Sub-Total	<u>32,905</u>	<u>19,293</u>	<u>12,243</u>	<u>15,551</u>	<u>19,193</u>	<u>19,457</u>	<u>19,588</u>
<b>3. Dependent Oversea Territories</b>							
Of France	8,213	9,231	11,935	15,283	17,039	18,563	16,965
Of United Kingdom	13,487	18,415	19,750	32,154	37,524	40,429	42,163
Sub-Total	<u>21,700</u>	<u>27,646</u>	<u>31,685</u>	<u>47,437</u>	<u>54,563</u>	<u>58,992</u>	<u>59,128</u>
GRAND TOTAL	275,817	275,745	351,053	437,831	487,332	531,539	560,641
M B/D	756	755	962	1,196	1,335	1,456	1,536

ESTIMATED TOTAL REQUIREMENTS FOR PETROLEUM PRODUCTS  
ANALYZED BY METHOD OF SUPPLY

(Participating Countries and Western Germany)

(Thousands of Barrels Daily)

	<u>Indigenous Supply</u>	<u>Output From Imported Crude Oil(a)</u>	<u>Imports Of Finished Products</u>	<u>Total</u>
1938	43	238	415	696
1946	39	122	519	680
1947	35	209	631	875
1948	50	271	746	1,067
1949	51	333	802	1,186
1950	50	434	811	1,295
1951	50	576	748	1,374

(a) Crude oil imports required to produce these quantities are shown in Statement No. 6.

IMPORTS ANALYZED BY SOURCE OF SUPPLY  
(Participating Countries and Western Germany)

Year	IMPORTS OF CRUDE OIL						IMPORTS OF FINISHED PRODUCTS					
	"Dollar" Supplies		"Non-Dollar" Supplies		Total		"Dollar" Supplies		"Non-Dollar" Supplies		Total	
	M B/D	%	M B/D	%	M B/D	%	M B/D	%	M B/D	%	M B/D	%
1938	117	47	132	53	249	100	174	42	241	58	415	100
1946	45	36	80	64	125	100	291	56	228	44	519	100
1947	106	49	111	51	217	100	316	50	315	50	631	100
1948	146	54	124	46	270	100	321	43	425	57	746	100
1949	177	51	170	49	347	100	345	43	457	57	802	100
1950	216	47	243	53	459	100	324	40	487	60	811	100
1951	331	55	271	45	602	100	247	33	501	67	748	100

F.O.B. PRICES USED TO VALUE SUPPLIES DURING 1948-51 FROM  
SOURCES REQUIRING PAYMENT IN UNITED STATES DOLLARS (a)

<u>Product</u>	<u>\$ Per Barrel</u>
Aviation Gasoline	5.5173
Motor Gasoline	3.5752
White Spirit	3.9047
Burning (Illuminating) Kerosine	2.9925
Power (Tractor) Kerosine	3.2261
Gas/Diesel Oils for Inland Trade	2.7037
Gas/Diesel Oils for Bunkers	2.4250
Fuel Oils for Inland Trade	2.3279
Fuel Oils for Bunkers	2.1400
Lubricants	10.0000
Bitumen	5.7377
Paraffin Wax	29.2250
Petroleum Coke	4.7187
Crude Oils-Light/Medium	2.0016
Crude Oils-Heavy/Topped	1.6800

- (a) Prices are based upon market export quotations ruling on July 1, 1947 for F.O.B. United States ports. No attempt has been made to forecast the possible trend of prices during the next four years.

F.O.B. VALUE OF PETROLEUM REQUIREMENTS ESTIMATED TO BE PAID FOR IN U.S. DOLLARS 1948-51

(Participating Countries, Western Germany and Dependent Oversea Territories)

(Thousands of Barrels. Thousands of Dollars.)

Product	1948		1949		1950		1951		Total	
	Barrels	Dollars								
Aviation Gasoline	4,492	24,784	4,311	26,544	5,467	30,161	4,235	23,366	19,005	104,855
Motor Gasoline	38,597	137,992	36,868	131,810	34,890	124,741	24,054	85,998	134,409	480,541
White Spirit	542	2,116	558	2,178	590	2,303	199	778	1,889	7,375
Kerosines	12,769	39,355	13,081	40,344	12,963	40,062	9,064	27,833	47,877	147,594
Gas/Diesel Oils	25,809	68,839	26,014	69,475	27,839	74,414	24,307	64,805	103,969	277,533
Fuel Oils	50,348	113,551	58,928	133,579	62,309	141,405	51,665	116,396	223,250	504,931
Lubricants	5,346	53,466	5,657	56,567	5,464	54,638	4,279	42,737	20,746	207,458
Bitumen	1,025	5,880	1,110	6,370	988	5,670	1,147	6,580	4,270	24,500
Paraffin Wax	874	25,530	992	28,980	1,023	29,900	1,054	30,820	3,943	115,230
Petroleum Coke	342	1,612	342	1,612	369	1,742	424	2,002	1,477	6,968
Crude Oils	53,494	103,614	64,894	125,944	70,264	136,080	111,236	218,224	299,888	583,862
<b>TOTAL</b>	<b>193,638</b>	<b>576,739</b>	<b>213,255</b>	<b>623,403</b>	<b>222,166</b>	<b>641,116</b>	<b>231,664</b>	<b>619,589</b>	<b>860,723</b>	<b>2,460,847</b>

F.O.B. VALUE OF PETROLEUM REQUIREMENTS (BY COUNTRIES)  
ESTIMATED TO BE PAID FOR IN UNITED STATES DOLLARS. 1948-51  
 (Participating Countries, Western Germany and Dependent Oversea Territories)

(Thousands of Barrels. Thousands of U.S. Dollars)

	<u>1948</u>		<u>1949</u>		<u>1950</u>		<u>1951</u>	
	<u>Barrels</u>	<u>Value \$</u>						
<b>1. Participating Countries</b>								
Austria	-	-	-	-	-	-	-	-
Belgium	8,366	28,362	8,609	29,577	8,576	23,752	8,638	29,242
Denmark	8,992	27,774	10,011	30,637	11,128	34,009	11,039	34,040
France	43,537	95,072	49,449	105,346	46,066	92,731	47,462	95,347
Greece	1,979	7,761	2,125	8,384	2,212	8,819	2,388	9,442
Iceland	529	1,629	520	1,629	519	1,629	515	1,629
Ireland	3,026	12,698	3,233	13,383	3,514	14,210	3,672	14,557
Italy	20,826	55,064	22,270	58,537	24,013	62,702	26,149	67,481
Luxembourg	333	1,233	347	1,479	338	1,547	375	1,646
Netherlands	8,189	27,278	8,522	28,401	9,118	28,420	9,130	28,818
Norway	4,369	12,740	4,836	13,990	5,236	14,925	5,618	15,970
Portugal	3,957	9,201	4,229	9,816	4,559	10,600	4,612	10,844
Sweden	17,045	48,755	19,213	51,792	22,614	59,588	23,363	62,726
Switzerland	2,841	9,591	3,838	11,820	3,814	11,820	3,792	11,820
Turkey	1,685	7,003	2,407	10,034	3,069	12,522	3,651	15,348
United Kingdom	39,356	138,184	40,989	139,998	44,145	148,877	48,518	111,573
Sub-Total	<u>165,030</u>	<u>482,345</u>	<u>180,598</u>	<u>514,823</u>	<u>183,921</u>	<u>531,181</u>	<u>198,922</u>	<u>510,483</u>
<b>2. Western Germany</b>								
Bi-Zone	6,818	22,163	9,129	29,340	8,982	28,706	8,989	29,029
French Zone	1,646	7,229	2,342	10,354	2,347	10,466	2,341	10,466
Sub-Total	<u>8,464</u>	<u>29,392</u>	<u>11,471</u>	<u>39,694</u>	<u>11,329</u>	<u>39,172</u>	<u>11,330</u>	<u>39,495</u>
<b>3. Dependent Oversea Territories</b>								
French	10,347	35,326	9,736	33,712	9,493	31,900	8,374	28,114
United Kingdom	9,797	29,676	11,450	35,174	12,423	38,863	13,038	41,497
Sub-Total	<u>20,144</u>	<u>65,002</u>	<u>21,186</u>	<u>68,886</u>	<u>21,916</u>	<u>70,763</u>	<u>21,412</u>	<u>69,611</u>
<b>GRAND TOTAL</b>	<u>193,638</u>	<u>576,739</u>	<u>213,255</u>	<u>623,403</u>	<u>222,166</u>	<u>641,116</u>	<u>231,664</u>	<u>619,589</u>

DIAGRAM 4

*Estimated Total Requirements of Petroleum Products Analysed by  
Method of Supply 1938, 1946-1951*

(Participating Countries and Western Germany)

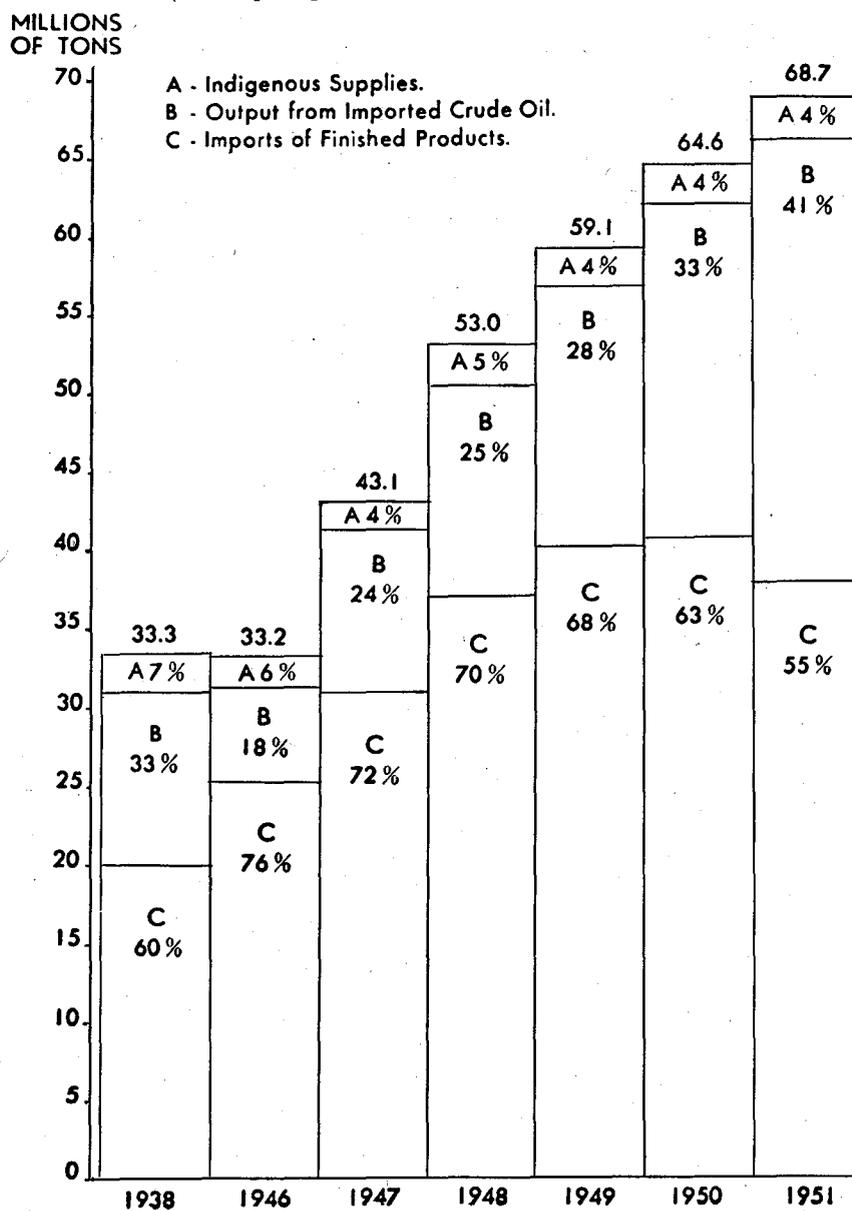


DIAGRAM 5

*Estimated Imports of Crude Oil and Refined Products Analysed by Source of Supply 1938, 1946-1951*

(Participating Countries and Western Germany)

MILLIONS OF METRIC TONS

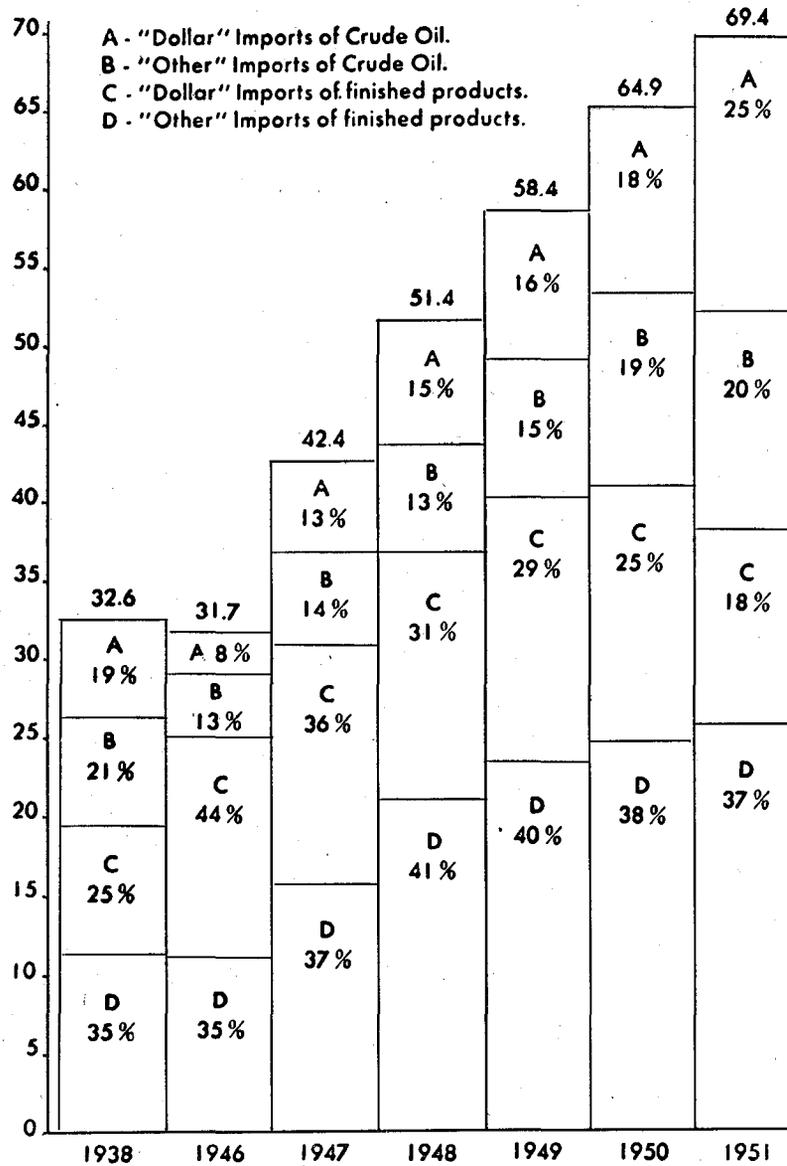


DIAGRAM 6

*Estimated Total Requirements of Petroleum Products 1938, 1946-1951*

(Participating Countries and Western Germany)

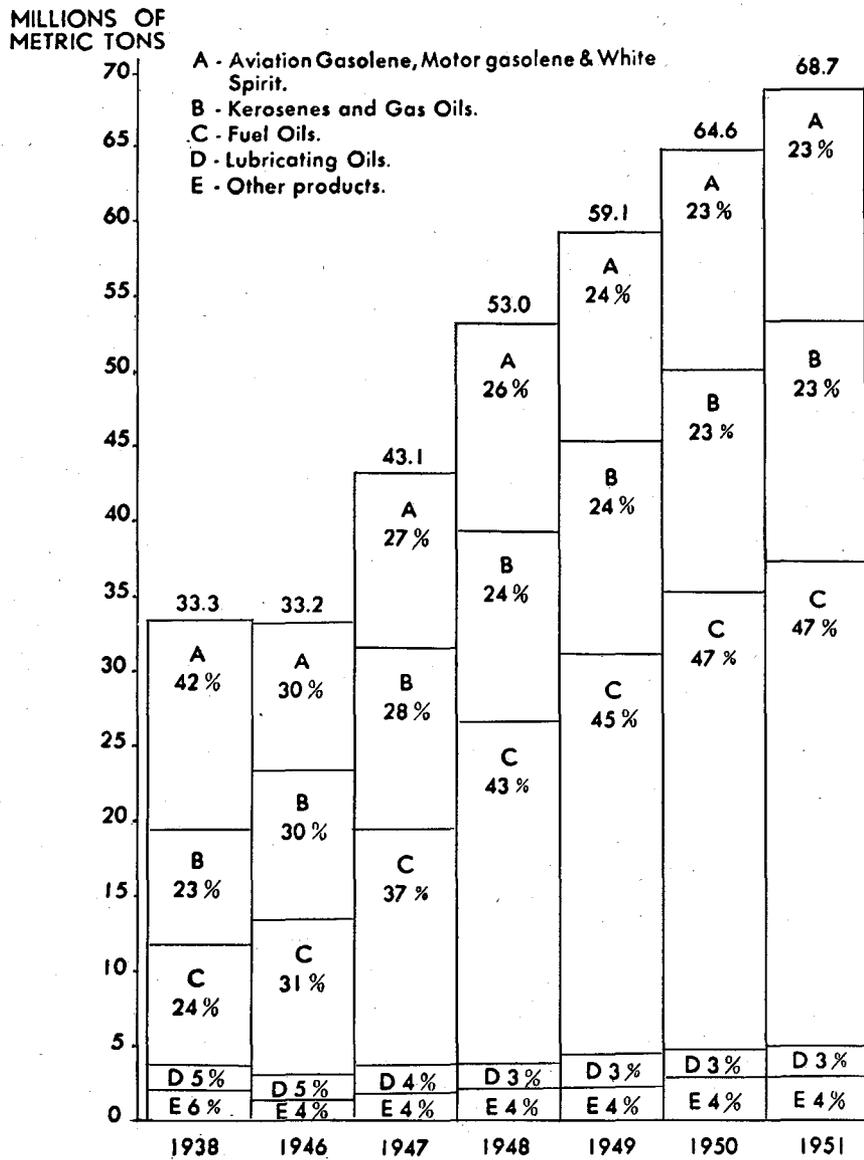


DIAGRAM 7

*Estimated Cost of Specialised Equipment Required from the United States 1948-1951*

